

LESSON 6

Camper Maze Design Challenge

Using the Go or Blockly Application

Introduction:

This lesson will introduce campers to the design process. Campers will be placed into groups of 2 or 3 and then challenged with the task of designing a maze with a set amount of material. Campers will have to brainstorm with their group, draw a sketch of their maze, gather materials, follow constraints, and build the maze. Then they should use the Go App or program Dash with Blockly to complete their maze so they know it is possible. Then, the campers should switch mazes with another group in the class and try to program Dash to complete the other team's maze. This lesson could be used for Go or Blockly Application practice.

Teacher Demonstration:

Explain the challenge above to the class.

Extended Activity:

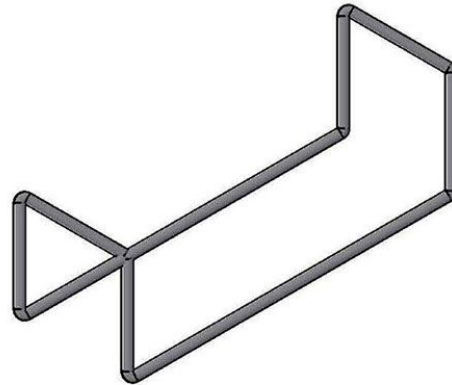
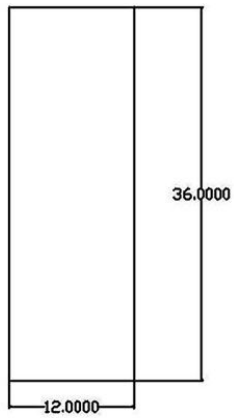
Camper grouping – 2-3 campers per group

1. Children will brainstorm with their group on what should be included in the maze.
2. Children will each sketch their ideas of what the maze should look like.
3. Children will complete one final sketch and show it to the teacher so it can get approved.
4. Children will gather all appropriate materials (enough PVC pipe and connectors or other material) to complete their maze design.
5. Children will construct their mazes
6. Children will use the Go App or Blockly App to program Dash to get through their own maze.
7. Children will then switch mazes and see if they can work together to complete the other team's maze using the Go or Blockly Application.

If time permits, encourage your campers to build as large and complicated a maze as they can. This activity works on the design process as well as critical thinking, creativity and teamwork skills. Once completed, campers will use the Go or Blockly Application to move Dash through their maze.

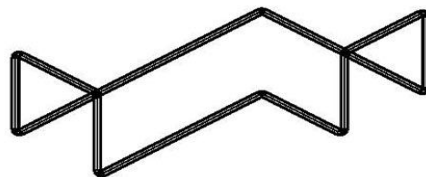
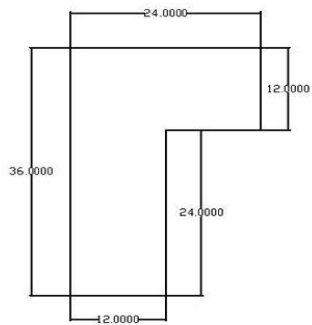
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Top View



Maze 1

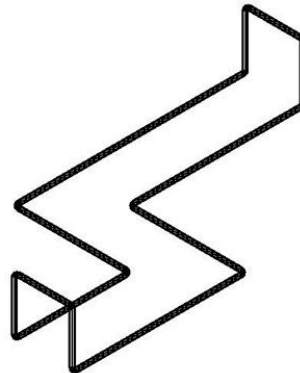
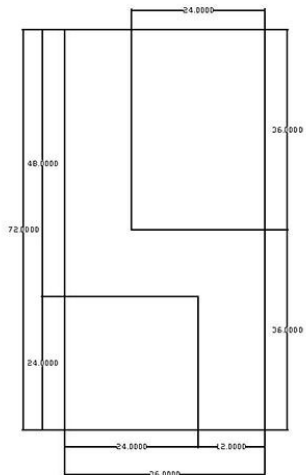
- (4) 1 ½ foot pieces
 - (2) couplings
 - (6) 1 foot pieces
 - (8) elbows
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Maze 2

- | | |
|---------------------|--------------|
| (2) 1 ½ foot pieces | (10) elbows |
| (2) 2 foot pieces | (1) coupling |
| (7) 1 foot piece | |

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Maze 5

- (4) 1 ½ foot pieces
- (5) 2 foot pieces
- (12) elbows
- (3) couplings
- (6) 1 foot pieces